LINEX SCRIBER

Training Manual

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Read this manual as you set-up your scriber.

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A.D.S./Linex, Inc.

Scriber Training Manual

Introduction

The Linex Scriber is a state-of-the-art computer controlled lettering and drawing device. Letters, figures, and symbols are drawn with the touch of a button. The Scriber frees the operator from tedious routine, yet lettering and drawing are of utmost precision.

This training manual is divided into various Lessons which lead you step-by-step through the operation of the Scriber. In each lesson are actual commands and examples for you to do on your Scriber so that you can learn how to use it. Naturally, you will not want to learn to use your Scriber on a final drawing; therefore, we suggest you practice on a sheet of blank mylar, paper, or whatever.

The Lessons are:

Lesson 1 Unpacking and Mounting Your Scriber
Lesson 2 Overview of the Keyboard
Lesson 3 Using the Scriber for Lettering
Lesson 4 Using the Function Keys
Lesson 5 Temporary Memory
Lesson 6 Permanent Memory
Lesson 7 Using Other Special Functions

Lessons 1-3 give you the basic set-up and familarize you with the keyboard. By the end of Lesson 3, you will have mastered lettering and the basic symbols. It is recommended that you complete Lessons 1 through 3 in one sitting which should take approximately 2 hours. The remaining lessons will familarize you with some of the special assets of the Scriber and can be done on an individual basis. If you have time you should work through the entire manual.

We welcome you to call upon us whenever you have a problem or question concerning your Scriber or if you have any comments concerning the Scriber or manual.

Toll free number:	1-800-241-3675
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We wish you luck in using the Scriber and encourage you to follow the Training Manual.

Before taking the Scriber out of the box, proceed to Lesson 1.1.

I. Lesson 1. Unpacking and Mounting Your Scriber.

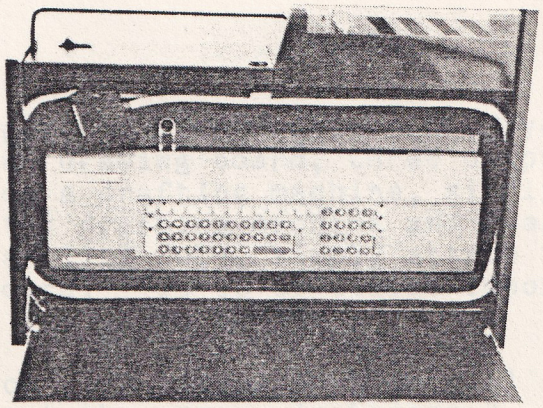
1.1 Unpacking from Boxes.

You have obviously opened the double-walled boxes your Scriber has come packaged in, as you have successfully located the Training Manual. Continue reading the manual as you progress through each lesson to become proficient with your machine.

Remove the styrofoam packing material and gently lift out your Scriber by grabbing the handle and lifting straight up from the box. Also, remove the power cord from the plastic bag. Please save the boxes and the styrofoam packing material.

1.2 Connecting the Pieces.

The Scriber consists of two parts. The controller is the part you have just lifted out of the boxes. The plotter or keyboard comes conveniently stored inside the controller and can be accessed by depressing the button located under the carrying handle on the controller.



To remove the plotter from its storage area, unwind the cable first, then gently lift the plotter from the cushion by using the cut-out located directly under the plotter. In the controller door you

will also find the Scriber Reference Manual as well as three clips which you will use later to secure the plotter cable. The Reference Manual contains a detailed explanation as to how the Scriber operates.

You are now ready to plug the plotter into the controller. Note that the cable has one side of 13 prongs and one side of 12 prongs. Be sure to plug the cable in correctly or else you will cause severe damage to the computer electronics. The plotter cable is secured correctly when it "clicks" into place.

Next, attach the power cord to the controller. This can only go one way. The power cord should always be connected to a grounded outlet of 110 volts.

1.3 Mounting the Scriber.

The plotter is attached like a scale to any drafting machine using the chuck found above the LCD display. Simply slide the plotter on the drafting machine as you would any scale. The plotter will also sit squarely against a parallel rule or can be used simply by placing on your drawing without a drafting machine or parallel rule.

1.4 Securing Plotter Cable.

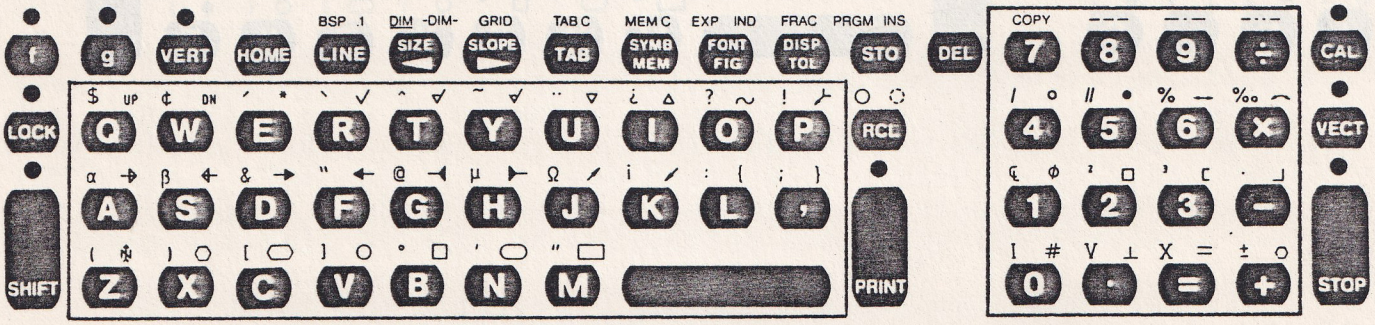
In order to keep the plotter cable out of your way when moving the plotter around your drawing board, three clips have been provided. If using the plotter on a drafting machine, simply attach the clips to the vertical arm of the drafting machine and snap the cable into the clips. If using a parallel rule, simply attach the clips to the left side of the drawing board. It is of utmost importance that you allow enough cable to avoid any sharp bends.

Please continue on with Lesson 2 which will explain the keyboard layout and how to insert the pen. In Lesson 3, you will be asked to turn the machine on and begin operating the Scriber.

II. Lesson 2. Overview of the Keyboard.

The keyboard is divided into two sections: firstly, the alpha-numeric and special function keys and secondly, the mode and action keys.

2.1 Alphabetic Keys, Numeric Keys and Special Function Keys.



Please Note: 803/803A models have a (ROT) key rather than a (VERT) key.

The grey alphabetic keys are in the same position as found on a typewriter although they are smaller in size. The only differences compared to a typewriter are:

1. The space bar which is the solid long grey key is smaller than the typewriter space bar and is located next to the M key.

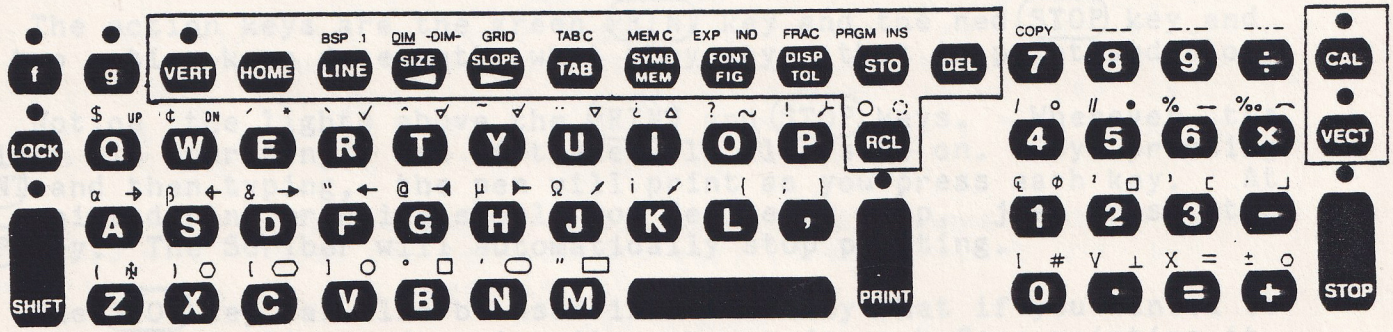
2. The comma (,) key is located next to the L.

3. The period and decimal point (.) serve the same purpose and is found in the numeric keypad next to the 0 (zero) key.

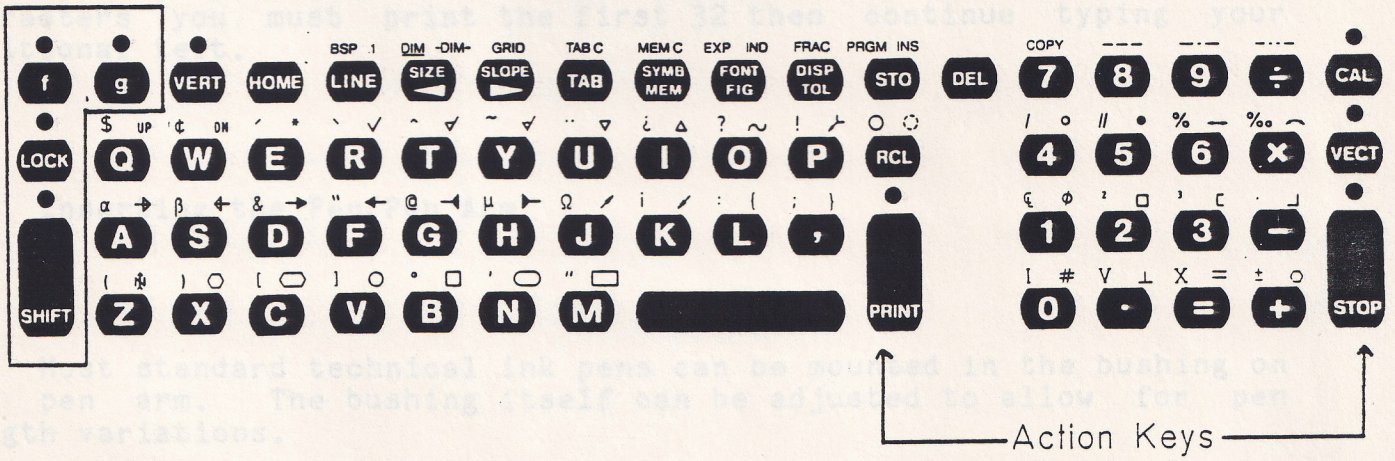
4. Other punctuations - such as question marks, brackets, parenthesis, colons, semicolons - are symbolized by the yellow coding above the alphabetic keys.

The grey number keys are positioned on the right side of the keyboard and are arranged in a numeric pad similar to a calculator.

The yellow special function keys are located as indicated on the diagram (see diagram on next page). With these keys you can vary lettering heights/size and slope, do dimensioning or fractions, set tabs for tables as well as several other functions.



2.2 Mode Keys and the Action Keys.



The mode keys are located to the far left hand side of the keyboard and color coded yellow (SHIFT), yellow (LOCK), orange (f) and blue (g).

The mode keys make the alphabetic, numeric and special function keys perform four different operations. For example, just as with a typewriter, having the shift on or off will give you upper or lower case lettering. With the (f) - mode key on, you will access the yellow symbols above the alpha-numeric or special function keys. With the (g) - mode key on, you will access the blue symbols above each of these keys.

An extremely important concept in working with the Scriber is: all the alpha-numeric and special function keys perform four different operations depending upon which mode you are in (upper case, lower

case, f or g).

The action keys are the green PRINT key and the red STOP key and the two action keys do exactly what they say, that is print and stop.

Notice the lights above the PRINT and STOP keys. Whenever the Scriber is operating, one of these will always be on. By pressing PRINT and then typing, the pen will print as you press each key. At any point during printing should you desire to stop, just press the STOP key. The Scriber will automatically stop printing.

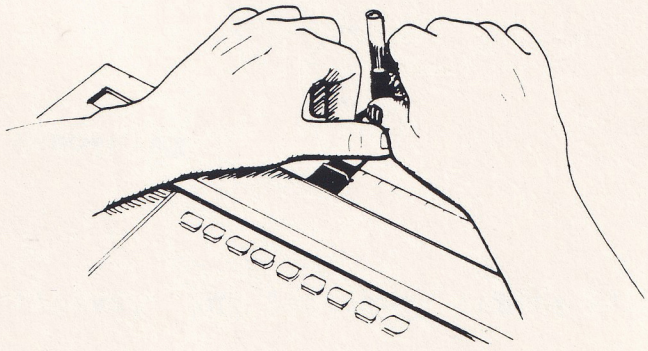
The STOP key can also be used in such a way that if you wanted to type your entire line and review it, you can do so before printing it. The important rule to remember about PRINT and STOP is that when in STOP-action mode, the pen arm will not move no matter what other key you press. The only thing that happens is whatever you type comes on the display. In PRINT-action mode, the pen will automatically do whatever you tell it with no indication coming on the display.

Now, about the display. The LCD display will show the first 16 characters that are typed. It will scroll to hold a total of 32 characters. When the display is full (that is, 32 characters have been typed), you will hear a beep. To continue a text longer than 32 characters you must print the first 32 then continue typing your additional text.

2.3 Inserting the Pen/Pen Arm

Most standard technical ink pens can be mounted in the bushing on the pen arm. The bushing itself can be adjusted to allow for pen length variations.

CAUTION: Always grip the pen arm firmly with one hand when inserting or unscrewing pens, or when making height adjustments to avoid damage to the pen arm mechanism.



The pen should be about a dime width away from the paper for

proper writing control. Now insert your pen by following these instructions. To set the height, screw the pen in the bushing until snug. You will see a silver clamp ring around the bushing which should be loosened. With the pen still in the bushing, turn the bushing until the pen tip is the proper height above the writing surface (about a dime width). Simply screw the clamp ring back down and tighten.

In order to insure proper writing, please remove the pen barrel from the pen. Some pen barrels are very long and cause the pen to become "top heavy" when operating the Scriber.

A special note concerning the pen arm: The pen arm is the most fragile part on the Scriber. Normal use and some precautionary efforts will provide you with long term use of your pen arm. Specifically, never lean on the pen arm, as it will bend. Also, always retract the pen arm into the lower most left hand mechanical limit when not in use and before storage. Finally, do not step on the pen arm or you know what will happen!

Continue on to Lesson 3 which will teach you how to use your Scriber.

III. Lesson 3. Using the Scriber for Lettering.

3.1 Turning the Scriber On/Initialization Procedure.

You are now ready to turn on the Scriber. Power is applied by means of the power switch located beneath the carrying handle on the controller. When power is on, the control panel lamp "POWER" is lit, and initialization of the computer begins through the following sequence:

Power and computer lamps lit on control unit.

If not already there, the pen arm moves toward lower left mechanical limit and the display reads "WAIT".

After 10 seconds, the pen arm will then move to the beginning of the first line, approximately 1 3/4" above the scale. Note the following indicator lights on the plotter will be lit: (STOP), (LOCK), (SHIFT).

When the Scriber is ready for use, the display will read (depending on model):

for an 802 Scriber: scriber 802/16k
for an 802A Scriber: scriber 802/32k
for an 803 Scriber: scriber 803/16k
for an 803A Scriber: scriber 803/32k

3.2 Re-Initializing.

To correct any mechanical or programming errors during operation, simply re-initialize the unit. To do this, switch off the power. Wait 5-10 seconds to allow static charges to disappear. Switch power on again. The Scriber should function normally.

3.3 Typing, Lettering, Numbering

As previously mentioned, the indicator lights above (STOP) ,

SHIFT , and LOCK will be lit. It is of utmost importance that you observe which indicator red lights are on, or lit, because it is through these lights that the Scriber is controlled.

If you have not already done so, turn on the Scriber. Type your name and press the PRINT key.

EXAMPLE: LINEX SCRIBER

You have obviously noted that the Scriber printed in all capital letters. This is because when the Scriber is first turned on, it "locked" in upper case (that is, SHIFT and LOCK lights are on).

Press the space bar 3 times and you will notice that the flashing line in the display (that is, the cursor) has moved over 3 spaces and yet the pen has not moved. This is a good example of working in STOP-action. As you already know, when in STOP-action, the pen will not move. The only thing that happens is that the key you push comes on the display. Now push the PRINT key and notice that the pen moves 3 spaces and the cursor is back to the left-most position of the display, indicating that the Scriber is ready for you to enter more information. Also notice the STOP key light is back on.

Let's now begin to use the various modes. First, press the LOCK key, type your name, and press PRINT.

You observe: linex scriber (all small letters)

When you pressed the LOCK key, the indicator lights above the LOCK and SHIFT keys go out. When no lights are on above SHIFT, that indicates the Scriber is in lower case. You do not use the lock key in lower case.

Again, space 3 times. Now press the SHIFT key and type your first name. When beginning your last name, press the SHIFT key and type your last name. Press the PRINT key and observe:

Linex Scriber

You have just mastered upper and lower case lettering. A brief review: To write in upper case, make sure the light above the SHIFT key is on. If the light is not on, push SHIFT and it will come on. To continue in upper case, make sure the SHIFT light is on and the LOCK light is on. Single upper case letters can be achieved by pressing SHIFT and the proper key. Because you do not press LOCK, only the next character will be capitalized and the remaining letters will be in lower case.

Similarly, a down-lock is performed when in the LOCK state. Pressing the function unlocks only the next single key, and the LOCK state reappears. For example, make sure the SHIFT and LOCK lights are on, then press:

M SHIFT C D LOCK ONALDS PRINT

You should print out McDonalds

To unlock a (LOCK) state, press (LOCK).

The numbers are found in both lower and upper case therefore, they print identically in both shift lock and no shift lock. Type the numbers 0-9, press (PRINT) and observe:

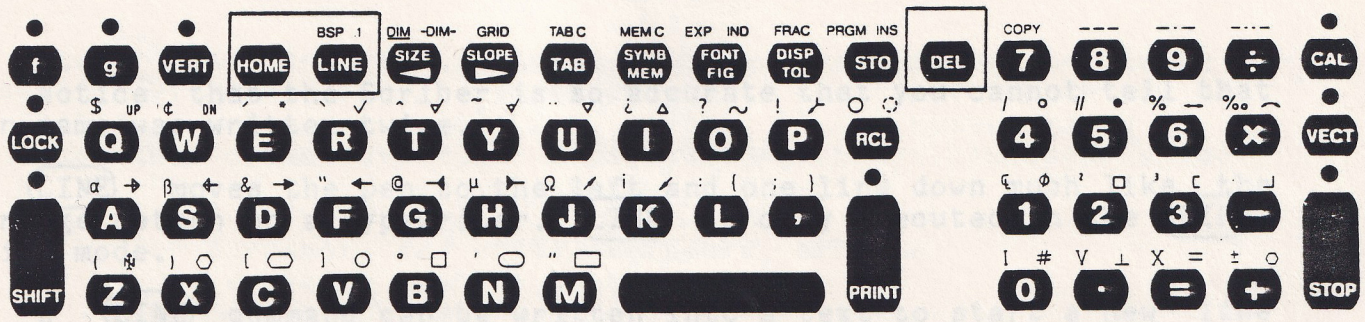
0123456789

All of the previous lettering has been done in the (STOP)-action mode. This mode functions by typing in your text and then pressing the (PRINT) key to enter into the (PRINT)-action mode. Note, when you are in the (STOP)-action mode, your text will be in the display. The text does not leave the display until you (PRINT) it or clear it. Clearing the display will be demonstrated in the next section.

The plotter can also function in the (PRINT)-action mode. To enter this mode, press the (PRINT) key. Note, the red light above the (PRINT) key must be on to signify that it is the (PRINT)-action mode. If the light did not come on, press the (PRINT) key until it does come on. In the (PRINT)-action mode, the Scriber acts as a typewriter and prints the letters and symbols as you type them. Printing can be stopped by either not typing any more or by pressing the (STOP) key. When pressing the (STOP) key note that the indicator light comes on. For example, push (PRINT) , type your name and watch the pen write as you push each key. When you have completed your name, press the (STOP) key and continue with the lesson.

3.4 Deleting/Clearing the Display.

You must begin to learn how to use some of the special function keys. The keys of interest will be (DEL) , (HOME) , and (LINE).



From time to time you may type an incorrect character into the

display. Corrections can be made by pressing the (DEL)(ete) key. For example, with the stop light lit, type your name. Push the (DEL)(ete) key and notice the cursor backspacing. You can continue deleting characters by pressing the (DEL)(ete) key.

The (DEL) (ete) key is only used to correct the last character typed. Later on we will see how to make corrections in the middle or beginning of our text.

To erase an entire line of text simply press the (DEL)(ete) key repeatedly or the (STOP) key three times.

3.5 Home and Line.

You might have noticed that your pen is slowly inching its way across the page, and you might be wondering how to bring it back. Well, read on.

(HOME) moves the pen to the left end of the first line. (HOME) is only executed in the (PRINT)-action mode. Simply press the (HOME) key then the (PRINT) key to move the pen to the (HOME) position. A (HOME) command is indicated in the display as ↖

While certainly not required, it is good practice to move the pen to the home position before writing any text. The reason for this is that in many instances, your pen may be dry and consequently the first several characters might not have been written. Because you started from the home position, you can easily return to the home position after the text has been printed and retype the the missed characters.

For example, with the (STOP), (SHIFT), and (LOCK) lights on, type:

(HOME) your name (HOME) your name (PRINT)

You should observe: LINEX SCRIBER

Notice that the Scriber is so accurate that you cannot tell that your name was written twice.

(LINE) moves the pen to the left and one line down much like the carriage return on a typewriter. (LINE) is only executed in the (PRINT)-action mode.

A (LINE) command can be written into a text to start a new line and is indicated in the display as ↶

A (LINE) command which attempts to move the pen lower than the

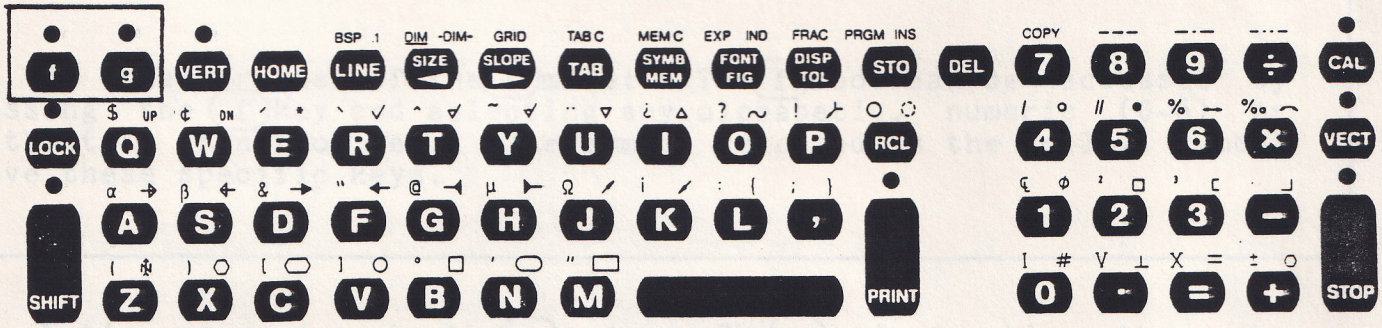
writing limit (that is, on or below the scale) stops the Scriber and must be cleared by pressing (STOP) three times and (HOME) to move the pen back to the home position.

Try this. With the (PRINT) light on, push (HOME). Now push the (LINE) key several times slowly and observe the pen dropping down one line at a time. Eventually you will tell the pen to move below the lower drawing boundary. When that happens you will hear the Scriber beep and the machine is now locked-up. To clear it, press (STOP) three times and then (HOME) and (PRINT). The other alternative is to simply turn the Scriber off, wait five seconds, and turn it back on.

As you are practicing the various lessons, you can insert (HOME) and (LINE) as you see fit, or whenever reaching the horizontal boundary which is 10 inches wide.

3.6 f and g Mode.

Accents, symbols, punctuation marks and signs in common technical use are placed as (f) and (g) modes on the Scriber keyboard.



The (f) mode contains accents and other symbols that are used in connection with lettering. Other symbols in the (f) mode which you will use include punctuation marks (? , : ! () [] /), number marks ($, %, @), and other common symbols. Note however, the yellow symbols above B, N, M (° ′ ″). An explanation follows:

° ′ ″ for surveyors and civil engineers, BMN are degrees, minutes, seconds.

′ ″ for architects, N and M are feet and inches.

′ ″ in punctuation, N and M serve as the apostrophe mark and the closed quotation mark.

Now for an example of using these symbols. Remember, you will be changing modes as you type. First press the (STOP) key, and if the (LOCK) light is on, press it to unlock whatever mode (SHIFT, f, or g) the Scriber was in. Then,

Press (f) (LOCK) Q W O D Z B X and (PRINT)
You should have a line that appears: $¢?&(°)

Let's try a more typical example. We want to print N 74° 38' 05" W. First press (LOCK) to get out of the (f)-lock mode.

Then press (SHIFT) N space 74 (f) B 38 (f) N 05 (f) M space (SHIFT) W (PRINT).

Did you print out N 74° 38' 05" W?

If you did, good work! If you did not, do you understand why you did not?

Once again, note how pressing the (SHIFT) key only allows for the next character to be printed in capital letters. The same procedure followed when pressing the (f) key; that is, only the next entry appeared as a symbol but the second entry was a number.

You can lock into the (f) mode by pressing (f) (LOCK). To exit (f)-(LOCK) mode, press the (LOCK) key which will clear you out of the (f)-mode as well.

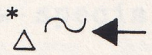
A brief review of the (f) mode: The (f)-mode can be accessed by pressing the (f) key and selecting any alphabetic, numeric (0-6) or arithmetric function key. The symbol selected is the yellow symbol above these specific keys.

Let's proceed on to the (g)-mode. The (g)-mode functions the same way the (f)-mode did. The (g)-mode functions are specialized, such as surface roughness symbols, arrows, frames, and the like. Normally, these symbols will not be used in conjunction with text, and some of them even end the pen far from the initial baseline. (Examples: angular arrows, roughness symbols).

To access the (g)-mode, be sure the light above the (g) key is on. To turn it on, press the (g) key. Once again, you can enter a (g)-lock position by pressing the (LOCK) key. If you do not lock into the (g)-mode, only the next character will be the (g)-mode character and the remaining characters typed will be in the previous mode.

Examples of using the blue symbols, that is, the symbols above the alphabetic, numeric, and arithmetic function keys:

Press (g-LOCK) EIOF (PRINT). Hopefully, you should see a line such as follows:



Now, exit the (g-lock mode by pressing the (LOCK) key. Go to the home position. Accomplish this by pressing (HOME) and (PRINT). You may need to reposition your Scriber on your worksheet.

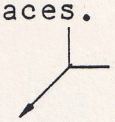
Press the (g) key and the Z key which is the north arrow. Now press (PRINT). Ahh! Your Scriber is beeping at you. Most of the (g-mode symbols require more than one character space to print. For the north arrow, you need three spaces from the (HOME) position. To delete the initial north arrow you programmed, press the (STOP) key three times. This will clear the display and allow you to retype the north arrow.

Space three times, press (g) Z (PRINT). Hopefully, you will have the north arrow

Another example is the hexagon found above the X letter key. Press the (g) (LOCK) and type in 5 hexagons by pressing the X key five times. (PRINT)

Notice how the hexagons print within each other. On the same line, space three times, press the X key, space three times, press the X key, do three more times and press (PRINT). Notice how the five hexagons are touching each other but not overlapping.

The various arrow keys function much the same way. The closed right arrow uses three character spaces (→). Note, the arrow key above the letter P. This particular symbol needs both width and height; therefore, this arrow cannot successfully be printed in the home position. To get around this, simply press the (LINE) key twice and space in three spaces. Now you are able to press (g) P (PRINT).



The (g-mode symbols above the numbers 8,9 and ÷ are repeat keys. The keys need to be held down until you have finished one specific line length. You also need to be in the (PRINT-action mode. For example, push (PRINT) (g) (LOCK) and hold the 8 down. You should print out: ----------

You have successfully finished a very grueling Lesson 3. Take a break! Make sure you cap off your pen so the ink will not dry out.

IV. Lesson 4. Using the Function Keys.

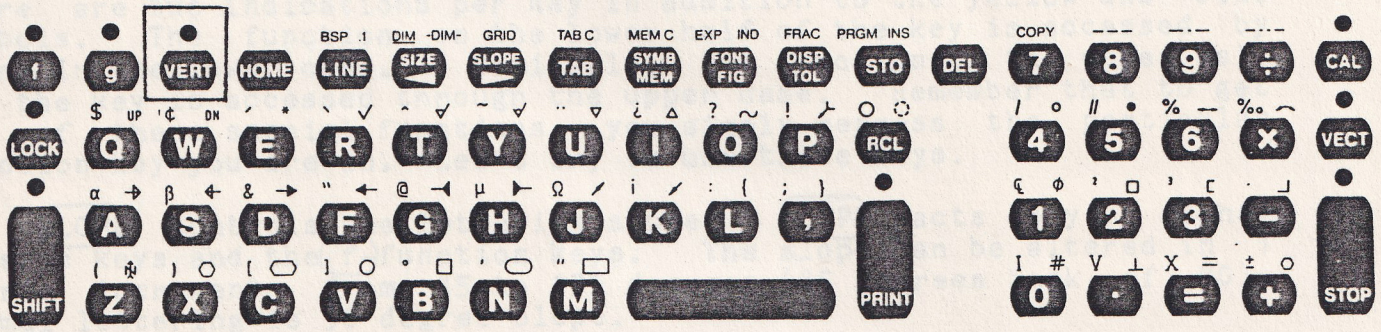
Now that you have finished your break you will be learning how to use the yellow special function keys. You already learned (HOME) (LINE) and (DEL).

The two rules governing the special function keys are:

1. To enter the special function, press that particular function key.

2. To exit the special function, repress that particular function key.

4.1 Rotating the Writing.



Please note that the (VERT) key has been changed to the (ROT) key on your Scriber.

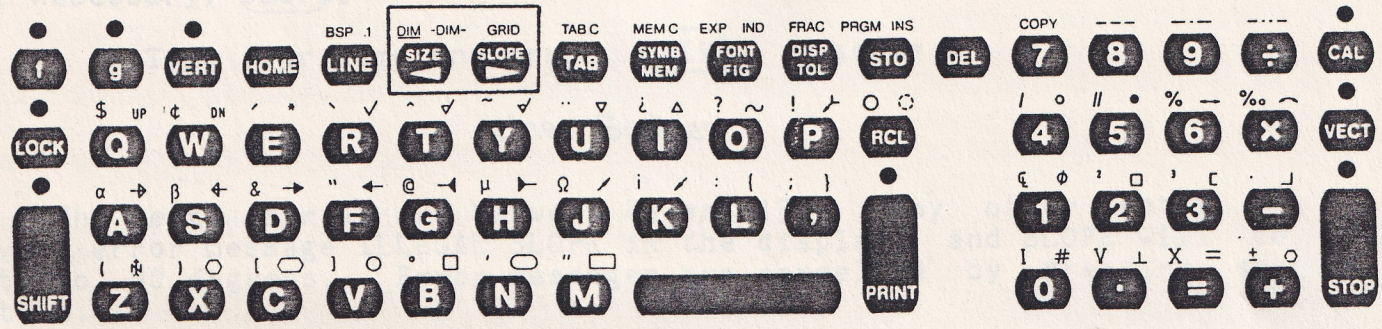
With rotation, you have the option of turning the writing 0°, 90°, 180°, or 270°. Normal horizontal writing is done with 0°. 90 turns the writing 90° to the left, while 180 turns the writing upside down. Finally, 270° writing will be the opposite of 90°. The following example will work you through (ROT).

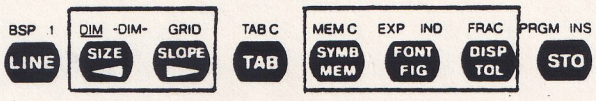
Push (ROT) and observe the display: direction 0°. Now type 90 and push (ROT). Push (HOME) (and (PRINT) if not already in PRINT-action mode) and try a few lines of type. Observe that (LINE) moves the pen down and to the right one line.

Push (ROT), type 180, and push (ROT). Again push (HOME) and do a few lines of type. Notice the upside-down writing. Finally push (ROT), type 270, and push (ROT). Again observe the (HOME) position and the way the Scriber writes.

To return to normal writing, push (ROT), 0 (zero), and (ROT). The home position is once again back in the upper left hand corner.

4.2 Slope and Size.



Notice that on the following keys 

there are two indications per key in addition to the yellow and blue symbols. The function on the lower half of the key is accessed by being in the lower case. Similarly, the function on the upper half of the key is accessed through the upper case. Remember that to get out of these special functions, you simply repress the particular function key you are in. Let's try to use these keys.

SLOPE controls the lettering slope. SLOPE acts only on alpha-numeric keys and the f-function keys. The slope can be altered in 1 degree increments from 45 to 135 degrees (45 degrees back of 90). Normal lettering is 90 degree slope.

Examples of key operations:

Making sure you are in upper case (shift light on), press SLOPE 75 SHIFT (if necessary to get into upper case) and SLOPE. These commands lock in the desired slope change.

Type your name.
i.e. SHIFT LINEX space SHIFT SCRIBER PRINT
You should print out

Linex Scriber

Let us emphasize some very important points. Since SLOPE is on the upper half of the SLOPE key, to change SLOPE, you must be in upper case (SHIFT light on). Remember that each alpha-numeric and special function key does four different operations depending if you are in upper case, lower case, f or g modes. Pushing the SLOPE key while in lower case (SHIFT light off) attempts to draw a dimension arrow.

Now let's reverse the angle. Again type SHIFT (if necessary) SLOPE. Observe the display. It should read SLOPE 75. Type in any other numbers. Let's try 120. Again lock in by repressing SHIFT (if necessary) SLOPE.

Type your name and press PRINT. Observe

Linex Scriber

The legal entries are between 45 and 135. Any other entry gives error message ILLEGAL SLOPE in the display, and SLOPE will be set to 90 degrees. Error messages are cancelled by pressing any button.

Try other degree slopes to see the changes. When you are ready

to continue, go back to the 90 degree SLOPE.

SIZE controls the character heights. The smallest lettering height that can be drawn is 0.040 inches while the largest is 1.180 inches. Any height between these, in increments of 0.001 inches, can be selected.

After power up, the Scriber has a 0.138 size. Always enter the size in the equivalent decimal.

Examples of key operations:
Press SHIFT SIZE 0.5 SHIFT SIZE

Size will be set to 1/2 inch.

Before we proceed with this example, there is an important point you should know. After changing sizes, it is very important to push the HOME key. Executing a HOME command will allow the pen enough room in the 2" vertical drawing limit of the Scriber to draw the larger letters.

As you have already noticed, the Scriber always starts printing from the bottom of the letter. In addition, upon power-up, the home position is located 1 3/4" above the scale. If you attempt, for example, to draw letters with a 0.5 (1/2") size, you will obviously exceed the 2" vertical pen reach. Therefore, the home position for a 0.5 size letter is approximately 1 3/8 inches above the scale. For a 1" size, the home position is only 1/2" above the scale.

Now let's continue with the example.

PRESS HOME type your name and press PRINT. Observe:

Linex Scriber

Let's go to smaller letter height. First, observe the indicator lights to determine in which mode you are. If you are not in the SHIFT mode, you will need to press the SHIFT key, then SIZE. Note the display. It should read TEXT SIZE 0.500. Change the size by pressing the lettering height desired: 0.040. To lock in this size press SHIFT and SIZE. Your Scriber is now programmed to the smallest lettering size. Type your name and print it out. You should observe:

Linex Scriber

While we have individually changed SLOPE and SIZE, you can change

them both and print your text. For example, program SIZE to be 1/8" (0.125) and SLOPE to be 66. The commands are: Press (SHIFT) (SIZE) 0.125 (SHIFT) (SIZE) (SHIFT) (SLOPE) 66 (SHIFT) (SLOPE). Type and print your name.

Linex Scriber

The 803 and 803A Scribers also have the ability to do expanded or contracted ("squeezed") lettering. Continue on for the example.

Suppose we want to do 1/2 inch condensed lettering. First, take off the slanted lettering. Push (SHIFT) (if necessary) (SLOPE) 90 (SHIFT) (SLOPE). Now push (SHIFT) (if necessary) (SIZE) and observe the display:

size 0.125/100

The "/100" represents the 100% or normal lettering. Push 0.5 (f) (4) (the f-function of 4 is the slash) 50 (SHIFT) (SIZE). Now push (HOME), type your name, (PRINT) and observe:

Linex Scriber

Now push (SHIFT) (SIZE) 0.5 (f) (4) 200 (SHIFT) (SIZE). Type your name, (PRINT) and observe:

Linex Scriber

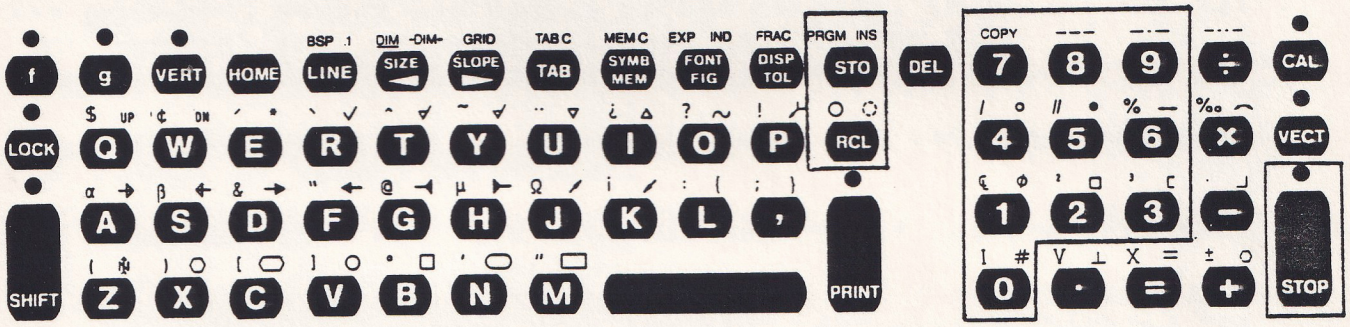
To return to normal 1/8 inch lettering, push (SHIFT) (SIZE) 0.125 (f) (4) 100 (SHIFT) (SIZE).

Continue onto lesson 5 to learn temporary storage.

V. Lesson 5. Temporary Storage.

The Scriber has 10 temporary storage locations, each with 32 character capacity. The storage registers are accessed via the numeric pad in numbers 0-9, much like a standard hand-held calculator.

To store text, you must be in the STOP action mode. Look at your indicator lights to determine if you are in this mode; if not, go there by pressing STOP. Simply type in your text (up to 32 characters). You can view your text in the display. To store this text, press STO and the desired location, i.e., 0 register. You can be sure the information is stored correctly when it disappears from the display. If you want to store more than 32 characters, simply STO into another available register.



Recalling text can only be done in the STOP-action mode. To recall, press STOP RCL and the register location where the text has been stored. Once recalled, the text appears in the display.

At this point, you have two choices:

1. PRINT the text by pressing PRINT or
2. Clear the display by pressing STOP twice. If you have cleared the display and realize you did want to print that message, just RCL the register number again, and PRINT the text.

Temporary memory in any particular register lasts only as long as you do not turn off your Scriber or if you do not store another text into that register. The only way to edit this text is to press DEL. To clear the storage register without turning off your Scriber, store a blank display in the register.

We have stressed that when recalling text you must be in the STOP-action mode. Well, what happens if you forget and try recalling in the PRINT-action mode? Good question! When in the PRINT-action

mode, (RCL) will recall the last word written in the display and immediately print it out on your drawing. What is printed is all characters after the last space.

Suppose you want to save your text in permanent storage. Lesson 6 will introduce you to permanent memory.

VI. Lesson 6. Permanent Storage.

6.1 Introduction.

Any text or figure that you want to keep for any length of time must be stored in permanent memory. Permanent memory refers to the fact the the information you store will remain there after the Scriber has been turned off. The data is retained through the use of a lithium long life battery on the memory board. While the battery is warranted for 5 years, it should last much longer. If the battery needs replacement, the display will show:

BATT LEVEL LOW

The permanent memory can reside either internal (that is, built into the controller) or external (that is, in the form of memory cartridges). Depending on the model you have, the:

802 Scriber has 16k internal memory and can use external memory cartridges.

802A Scriber has 32k internal memory and can use external memory cartridges.

803 and 803A Scribers have the same memory capacities as the 802 and 802A, respectively.

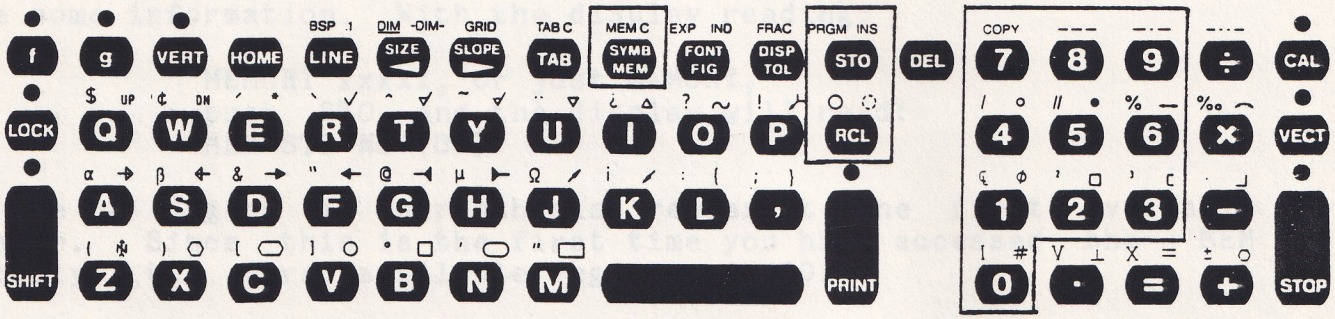
The external memory cartridges come in two sizes of capacity: 3 1/2 k-bytes and 14 k-bytes. The capacity refers to the number of characters that you can store in the memory. Keep in mind that every key stroke is roughly equivalent to 1 byte of information. Therefore, an 802 has an approximate capacity of 16,000 keystrokes.

On both the internal and external memory cartridges, there are 100 storage positions or registers. Each register will hold as much or as little as you want. It is possible that the entire capacity of the memory can be taken with one register.

The registers are accessed with 2 digits, 00 through 99. It is important when storing or recalling that you type 2 digits. For example, register 5 is accessed by pushing 05, not just 5. If you just push 5, the Scriber thinks you are accessing a register in the fifties.

Since internal and external permanent memory operate the same, we will no longer distinguish between the two and will simply refer to them as the memory.

6.2 Accessing the Memory.



To access the memory, first make sure the display is blank and that you are in lower case. Press the (MEM) (ory) key. The display shows: USER MEM No

The Scriber is now waiting for you to respond with a slot number. The slot number for an external memory cartridge is either 1, 2, 3 or 4, depending upon which slot has the cartridge. For internal memory, the slot number is 0 (zero). (For the remaining part of this example, it is assumed you are accessing the internal memory.)

Now type: 0 (zero, not the letter O)

The display will show:

MEMORY xxxxx

where xxxxx represents the number of bytes of memory which are free for your use.

You have now successfully accessed the memory.

You are also at a branch where you can do one of three things: either store something, recall something, or leave the memory. To leave the memory, simply press the (MEM) (ory) key. The display will go blank showing you have left the memory and are now back to the normal operation.

Just for practice, push (MEM) (after insuring you are in lower case). The display should be blank. Push (MEM) again, then 0. Once again you are back to the branch where you can either store, recall or leave the memory.

It is important you remember that whenever you see MEMORY in the display, you have three choices. In fact, if you press any other key besides (STO), (RCL), or (MEM) the Scriber will beep. Try it and see.

6.3 Storing Information.

Since you have already accessed the memory, let's now try to store some information. With the display reading:

MEMORY xxxxx, or just MEMORY,
push STO and the display will read:
MEM STO NO (00)

The 2 digits in parenthesis represent the first available register. Since this is the first time you have accessed the MEM obviously, the first available register is 00.

The Scriber is now waiting for you to decide in which register you want to store the information. Let's pick register #1, so type 01 and push (STO) .

After the two digits and (STO) have been pressed, the display will be blank. This is your indication that the Scriber is now waiting for you to type in your text.

To continue our example, type the following sentence

This is an example of storing text (LINE)
in permanent memory. (HOME)

Note that while you are typing you can use the (DEL) key to correct any typographical errors. Also note that the rules for (SHIFT), (f) and (g) still apply.

As was stated above, since each register has no limit as to how much can be put in it, you must tell the Scriber when you are done storing into the particular register.

To do this, simply push (STO) again. When the word MEMORY appears in the display you know you have successfully stored the message. If you have not already done so, push (STO) to end this section on storing.

6.4 Recalling Information.

Because the display reads: MEMORY we know we are once again back at our branch where we can either (STO), (RCL) or leave the memory.

This time, push (RCL) and the display reads:

RCL NO

Push 01 and (RCL) and the first 16 characters of the message appear. To print this, simply push (PRINT). You will notice that while the pen was writing, the display read:

REG - NO 01 100%

The register number 01 was obvious. The 100% represents the scale that the register was drawn in. You have the option of scaling any register up (to 500%) or down (to 10%). To print our message at 1/2 of its original scale, type (RCL) 01 (RCL) (S) 50 (PRINT) .

This is an example of storing text in permanent memory.

To print it twice as large type: (RCL) 01^ (HOME) (LINE) (LINE) (S) 200 (PRINT).

This is an example of storing text in permanent memory.

The home and 2 line commands were necessary to give the Scriber room to print the message.

You now have successfully stored and recalled a message. What happens if you want to correct or edit a message that you have in memory? Continue on.

6.5 Editing Text Stored In A Register.

You will recall that when using temporary memory, the only way to correct or edit what was stored was through the (DEL)(ete) key. Also, recall that the delete key only deleted the last character typed. In permanent memory, however, you have the option of inserting, deleting, or changing text without having to retype the message. Let's see how it's done.

You will recall that we have a message stored in register 01. With the display reading MEMORY , press (RCL) 01 (RCL) and the first 16 characters should appear. Now press (E) for edit. Notice how the first character in the display is blinking and the cursor is under the first character. An important rule to remember is that when you see the character over the cursor blinking, you are in the edit mode.

Basically, whenever you want to correct text in a register, you are doing one of three things:

1. Replacing or typing over a character.

2. Deleting characters.

3. Inserting characters.

Let's try replacing first. Suppose that in our example you want to say "placing text" rather than "storing text." Well, since the words "placing" and "storing" both contain seven characters, you will simply be replacing the word "storing" with the word "placing."

Moving the cursor to the "s" in "storing" is done by using the arrows under the (SIZE) and (SLOPE) keys.

> Warning: Since the arrows are accessed in lower case, it is imperative that you are in lower case before pushing them!!

After insuring lower case, push the arrow key under (SLOPE). You can hold it down or push it repeatedly until the cursor stops under "s" in "storing." Now type the word "placing." Notice how you are merely typing-over the old text.

To exit edit-mode (since you are now done replacing), simply press STO and you will be back to the display reading: MEMORY To check our work, press:

(RCL) 01 (RCL) (PRINT) and observe

This is an example of placing text
in permanent memory.

Deleting characters in memory is done much the same way as replacing characters. In our example, suppose you want to delete the word "permanent." Push:

(RCL) 01 (RCL) (E) (E is for Edit)

Making sure once again that you are in lower case, use the arrows to move the cursor to under the "p" in "permanent." Simply push the DEL (ete) key and watch the characters disappear one by one. When finished editing (and in this case, editing means deleting), simply press (STO). To check your work press:

(RCL) 01 (RCL) (PRINT) and hopefully you will print out:

This is an example of placing text
in memory.

Finally, let us assume that you want to say "text and notes" rather than just the word "text." To insert characters, press:

(RCL) 01 (RCL) (E)

Now move the cursor to under the "i" in the word "in." The blue function above the STO key is the INS (ert) key. Since it is blue, press: (g) (INS) and notice in the display how everything to the right of the cursor is being pushed back. Now type: and notes. Since you are done inserting press: (g) (INS). Since you are done editing (in this case, inserting text), push (STO).

Once again to check your work, press:

(RCL) 01 (RCL) (PRINT)

You should print:

> This is an example of placing text
> and notes in memory.

When first learning how to edit the permanent memory, it is very easy to get lost. That is, not knowing which key to press next.

Remember these rules:

1. To access a function, press that key.
2. To exit that function, press that key again.

These rules apply in all cases except one. To exit edit-mode, do not push "E"; but, push (STO). Perhaps the following table will help. Suppose you have just turned on the Scriber and you want to insert text somewhere in register 8.

Keystrokes	What it does
(MEM) (slot #)	Calls on memory
(RCL) 08 (RCL)	Recalls register 8
(E)	Goes into edit
(g) (INS)	Calls on insert mode
type your text	
(g) (INS)	Ends insert mode
(STO)	Ends edit
(MEM)	Ends/leaves the memory

Notice that as you work your way "deeper and deeper" toward insert, you back out of it the same way you got in, that is, pressing the same keys. The only exception, once again, is that (STO) rather than (E), ends edit.

6.5.1 Find Command

Whenever editing the contents of a memory register, it is first necessary to move the cursor to the point where you wish the changes to be made. So far you have been using the arrows on the lower half of the SIZE and SLOPE key. If the text is very long, however, it can take some time to move the cursor to the desired location.

There is an easier way. It is called the FIND command and is used as follows. Suppose we want to change register 01 so that it is double spaced, or in other words, we want to insert another line command. Press (RCL) 01 (RCL) (F) (the F refers to the alphabetic letter F key and not the orange f -mode key).

Observe the display. It should read FIND . Now type in any character string (maximum 30) that you want to search for. In our example, we want to search for the line command that is already in the register so we can insert another one. Therefore, push (LINE) and (PRINT) . Notice you have jumped to the ▯ and since it is flashing, you have automatically entered the edit mode.

The rest of the procedure for inserting text is the same as previously presented, that is:

press (g) (INS) , (LINE) , (g) (INS) , (STO) .
To check our work push (RCL) 01 (RCL) (PRINT) .

Observe:

```
This is an example of placing text
and notes in memory.
```

6.6 Deleting An Entire Register.

The procedure for deleting the contents of an entire memory register is very simple. All you need to do is store nothing or blanks over the existing contents. The Scriber, however, will warn you that you are about to delete the contents of an existing register.

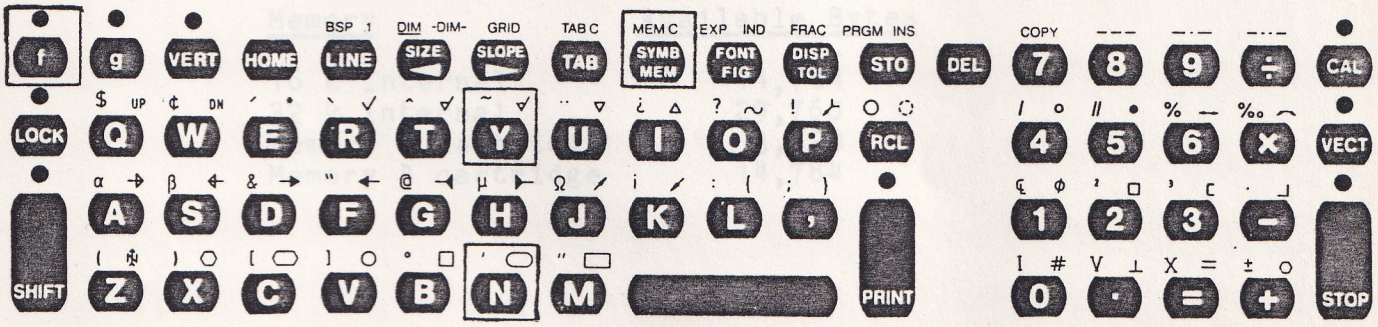
For example, push (STO) 01 (STO) . Since something already exists in 01, the Scriber will ask you, "DELETE REG Y/N?". If you do not want to delete the contents of 01, type (N) for no and the Scriber will go back to the memory message.

If you type (Y) for yes, the contents of 01 will be erased, and the display will go blank. The Scriber is now waiting for you to type the new text. By pressing (STO) , you are telling the Scriber that you are finished with this register, and you have essentially stored nothing in 01. Consequently, the next time you call on the memory, the number bytes available to you will have increased.

6.7 Formatting MEMORY.

When formatting MEMORY you will erase the entire memory contents of registers 00 through 99. Make sure you want to clear your entire memory before formatting.

The only time you can access the formatting command is when you first call on the memory. Consequently, the message MEMORY xxxx where xxxx represents the number of free bytes, is on the display. The specific function key to format the memory is the yellow (MEM C) located above the special function (SYMB/MEM) key.



First, you need to get into the memory. Making sure the display is clear and you are in lower case, press the MEM key and answer USER MEM NO with the appropriate number 0, 1, 2, 3, or 4 (0 for internal memory, 1-4 for external memory slot number). Formatting either the internal memory or the external memory cartridges is done the same way. Continuing with our example, we will use internal memory; therefore, USER MEM NO will be 0 (zero). To access the yellow figures, in this case, MEM C, you must be in the f-mode. Therefore, push f MEM C and observe the display:

FORMAT MEM Y/N

You must answer the Y/N option of Y for yes format or N for no format by simply pressing the Y or N alphabet key. If you select Y you will have a cleared memory; if you select N you will be exiting the memory clear. In either case, when you press Y or N the display will read MEMORY. At this point you have your three choices of either STO, RCL or leaving the MEM.

To check a cleared memory, you will have to exit MEM and re-enter MEM. The reason for exiting and re-entering is that the only time you get to the display of MEMORY xxxx is the first time you enter into the memory. The chart below shows the number of available bytes in an empty or clear memory.

Memory	Available Bytes
16 k internal	14,784
32 k internal	29,760
Memory 2 cartridge	3,520
Memory 4 cartridge	14,784

VII. Lesson 7. Using Other Special Functions.

Through-out the previous six lessons we have mentioned such functions as tabs, dimensioning, fractions, etc. Since you have become an expert on using your Scriber, we feel you know enough about the Scriber to read the reference manual you found in the side door.

Please turn to the reference manual to learn the other special functions you need for your everyday use. When you open the reference book to the Table of Contents, you will note that it is divided into the functions. For example, section 23 explains dimensioning in three pages. In this particular section you will learn manual and automatic dimensioning, as well as automatic broken dimensioning and solid line dimensioning. Again, if you do not understand the reference manual or if you need assistance, our

Toll Free Number: 1-800-241-3675

Or, Inside Georgia: 404-448-0977

Remember, we are here to help you.

Notes

Notes

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